## (12) UK Patent Application (19) GB (11) 2 304 823 (13) A

(43) Date of A Publication 26.03.1997

(21) Application No 9617376.0

(22) Date of Filing 19.08.1996

(30) Priority Data

(31) 19531871

(32) 30.08.1995

(33) DE

(71) Applicant(s)

Mercedes-Benz Aktiengesellschaft

(Incorporated in the Federal Republic of Germany)

Mercedesstrasse 136, D-70327 Stuttgart, Federal Republic of Germany

(72) Inventor(s)

Werner Aschner **Horst Hanauer** 

**Gernot Hertweck** 

(74) Agent and/or Address for Service

Jensen & Son

70 Paul Street, LONDON, EC2A 4NA, United Kingdom

(51) INT CL6 F02C 6/00 6/12, F02D 23/00

(52) UK CL (Edition O)

F1G GPG

F1T TGCB T102 T122 T132 T601 T611 T612 T613 T619

U1S S1994

(56) Documents Cited GB 2251461 A GB 2193258 A GB 2062752 A

GB 2172340 A US 4773225 A US 4428199 A

(58) Field of Search

UK CL (Edition O ) FIG GPG GPX , F10 QED , F1T

TGCB TGCX TGE

INT CL<sup>6</sup> F01D 17/00 17/02 17/04 17/08 17/20 17/24 , F02C 6/00 6/04 6/10 6/12 9/00 9/16 9/20 9/22 , F02D

23/00 23/02

ONLINE WPI

## (54) Controlling turbocharger boost pressure

(57) In a method of controlling the boost pressure in an internal combustion engine 11, which is supercharged by means of an exhaust gas turbo-charger 12, with an adjustable turbine control apparatus 17, signals corresponding to an injection quantity "EM", engine speed "N", boost pressure "P2", and exhaust pressure "P3", are fed to a control unit 20 that provides a control signal to an actuator 18, that controls the gas flow cross-section into the turbine. The control system derives a desired boost pressure value from signals indicative of "EM2, "N" and atmospheric pressure, and compares this with a signal corresponding to actual boost pressure to produce a deviation signal (dP2)(fig. 2). "N" and "EM" signals are also used to derive a reference "P3" signal, that is compared with a signal (P3\*) (fig.2) representing the difference between the signal corresponding to "P3" and the signal corresponding to "P2", thereby producing a deviation signal (dP3\*). The deviation signals (dP2 and dP3) are then fed to a fuzzy control unit (33) (figs. 2 and 3) to produce a control signal for the actuator 18. Excessive increases in exhaust backpressure during a positive engine load change, which would oppose engine torque build-up, are thereby avoided.

Fig. 1

